

## PMSM FOC motor driver based on the L6230 and STM32F103

Data brief

### Features

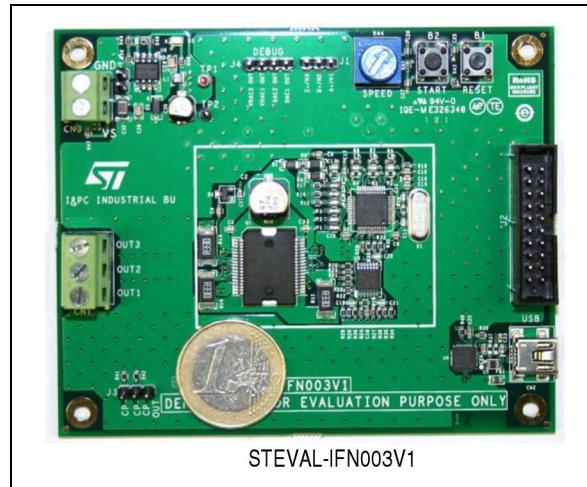
- Input range: 8 V up to 48 V (up to 45 W)
- STMicroelectronics' ARM™ Cortex-M3 core-based STM32F103 microcontroller
- DMOS fully integrated three-phase motor driver L6230 in a PowerSO package
- Four-layer board
- Sensorless and hall sensors/encoder
- Current sensing mode: single-shunt resistor
- Compatible with new version of STM32 FOC firmware library: STM32 PMSM FOC SDK v3.0
- Debug connector
- USB interface for real-time data exchange
- RoHS compliant

### Description

The STEVAL-IFN003V1 demonstration board is based on STMicroelectronics' ARM™ Cortex-M3 core-based STM32F103 microcontroller and the DMOS fully integrated three-phase motor driver L6230 implementing field-oriented control of a PMSM motor.

The board is designed as an evaluation environment for motor control applications in the range of 8 V - 48 V of DC bus voltage and up to 45 W, exploiting the computational power of the STM32F103. This microcontroller features internal 20 KB SRAM and 128 KB Flash, and SWD debugging. The L6230 DMOS driver features 2.8 A output peak current, non-dissipative overcurrent detection/protection, cross-conduction protection, uncommitted comparator, thermal shutdown and undervoltage lockout.

The STEVAL-IFN003V1 is provided with a specific USB interface for the real-time data exchange.



Offering dedicated hardware evaluation features, the STEVAL-IFN003V1 board is designed to help developers evaluate the device and develop their own applications. The STEVAL-IFN003V1 can be used together with the STM32 PMSM single/dual FOC SDK v3.0 and constitutes a complete motor control evaluation and development platform.

## 1 Schematic circuit

**Figure 1. Schematic (part 1)**

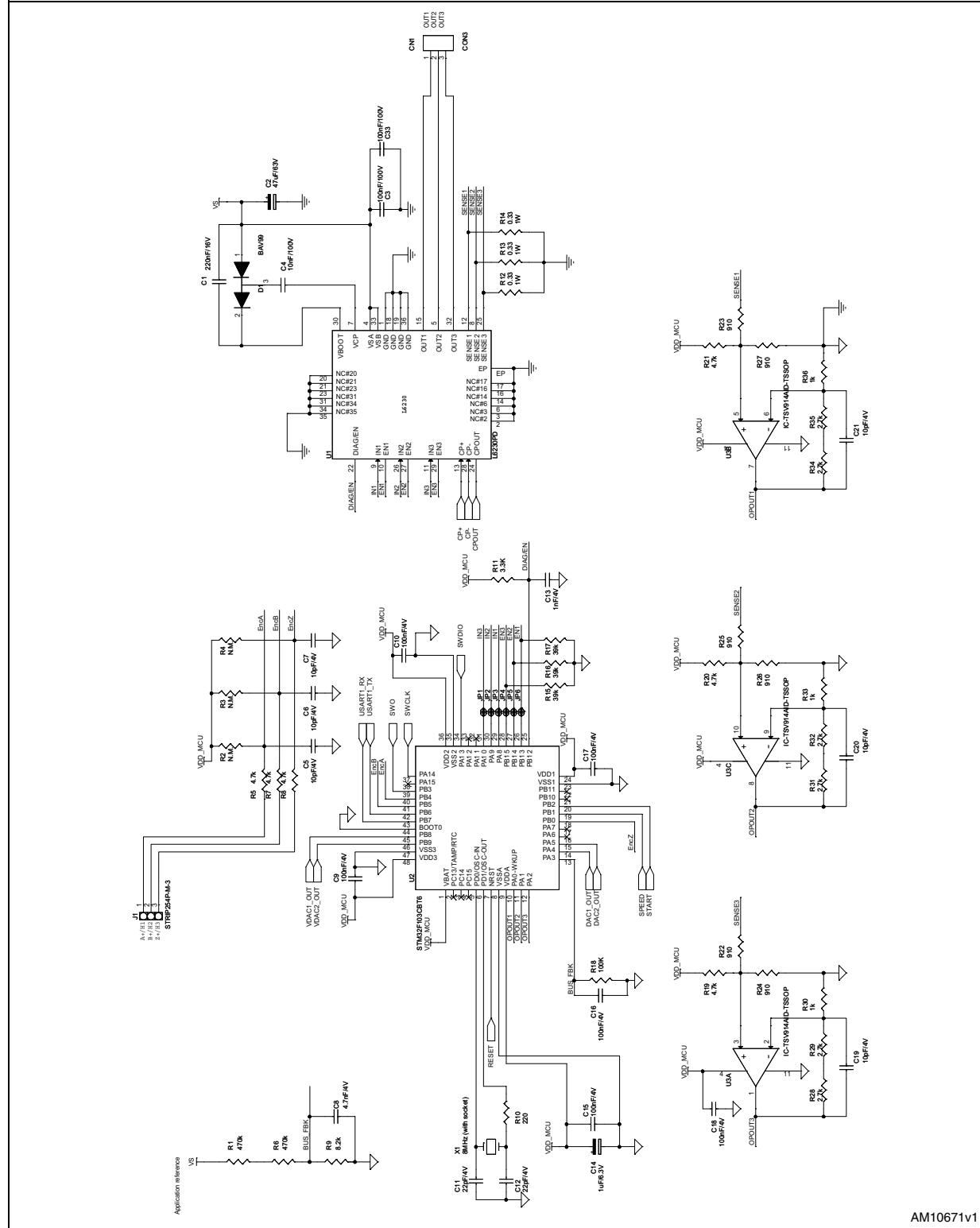
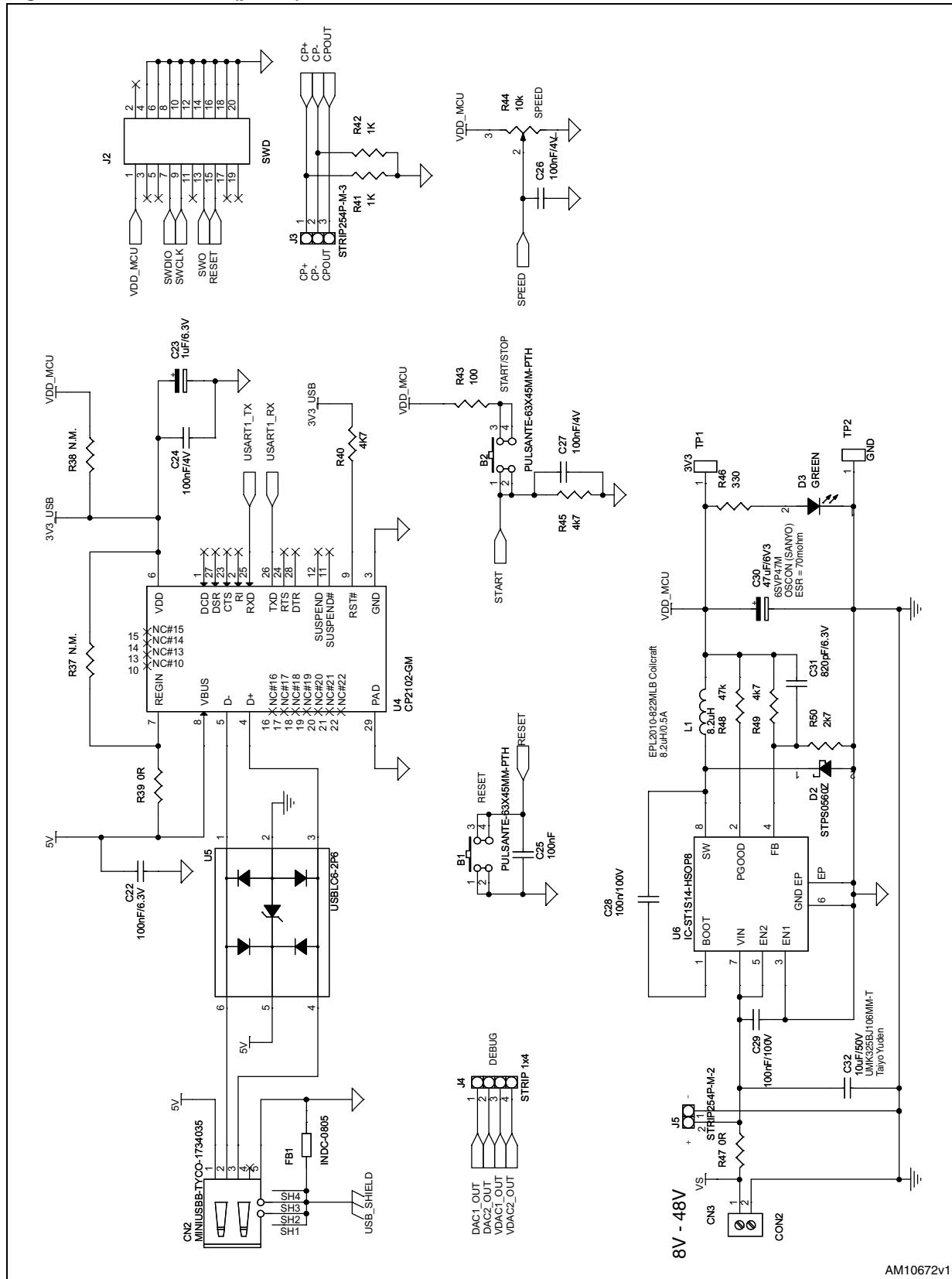


Figure 2. Schematic (part 2)



AM10672v1

## 2 Revision history

**Table 1. Document revision history**

Date	Revision	Changes
20-Oct-2011	1	Initial release.

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